REMARKS

This paper responds to the Office Action mailed March 18, 2003, with reference to the above identified application.

An objection has been raised against the drawings on the basis that they do not reproduce sufficiently. The attached replacement formal drawings address this objection.

An objection has also been raised against claim 24 on the basis that it multiply depends on other multiply dependent claims. Claim 24 has been amended into proper form and now depends on other singly dependent claims only.

Claims 22 and 23 stand rejected under 35 U.S.C. 112 as being indefinite. These claims have been amended, in line with the Examiner's suggestion, to refer to "each" dispersion compensating waveguide. It is respectfully submitted that the claims are now in acceptable form.

Claims 31 to 35 are cancelled, so that claims 1 to 30 are now pending in this application. Claims 1 to 20 and 25 to 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Loh et al. (US 6,317,539). Reconsideration is requested.

Claim 1 of the present invention is directed to an optical dispersion compensation device. The optical compensation device comprises first and second optical compensation units. The first optical compensation unit applies non-linear dispersion compensation across a signal band and the second optical compensation unit applies linear dispersion compensation across the signal band.

In the present invention, linear and non-linear dispersion compensation are therefore provided separately. Using these two separate degrees of freedom in the selection of linear dispersion and non-linear dispersion, the optical dispersion compensation device may easily be set to provide any desired linear dispersion and non-linear dispersion.

Loh et al. discloses a number of different interleaved, sampled and chirped Bragg grating arrangements. One of these arrangements has gratings with different sample periods, thereby forming a band pass filter (column 5, lines 54 to 58). Figure 7B of Loh et al., as cited by the Examiner, shows an application of this band pass filter in the form of an add/drop multiplexer. The reflection spectrums of the gratings 75, 76 have a gap corresponding to the channel that is added or dropped (column 6, lines 62 to 65). Neither the gratings 75, 76, nor any other element of figure 7B, have anything to do with dispersion compensation.

Another of the arrangements disclosed in Loh et al. has a grating with an aperiodic sample function, thereby providing non-linear dispersion compensation (column 8, lines 35 to 38). Loh et al. also discloses linear dispersion compensation provided by the same grating: "The chirp in the grating provides the dispersion ... and the chirp in the sampling function generates [non linear dispersion]" (column 8, lines 41 to 47). All of the dispersion compensation applications disclosed by Loh et al. involve linear and non-linear dispersion compensation provided by the same grating (figures 14A to 14C).

The Examiner argues that a person of ordinary skill in the art would have found it obvious to adapt the add/drop multiplexer shown in Figure 7B of Loh et al. to include a linear dispersion compensation unit in one branch of the circulator 77 and a non-linear dispersion compensation unit in another branch. The Examiner argues that the resultant device would be the optical dispersion compensation device of claim 1 of the present invention.

However, it is respectfully submitted that, when constructing an optical dispersion compensation device, the person of ordinary skill in the art would have no motivation to start from the add/drop multiplexer shown in Figure 7B of Loh et al., since it has nothing to do with dispersion compensation.

Furthermore, it is respectfully submitted that even if the person of ordinary skill in the art did apply the dispersion compensation teaching of Loh et al. to the add/drop multiplexer shown in Figure 7B, they would not arrive at the optical dispersion compensation device of claim 1 of the present invention. In particular, they would not arrive at a device in which linear and non-linear dispersion compensation are provided by separate units, as required by claim 1 of the present invention. Instead, they would arrive at a device in which linear and non-linear dispersion were provided by the same grating in accordance with the teaching of Loh et al. (column 8, lines 41 to 47; Figures 14A to 14C).

The unique arrangement of the present invention, in which linear and non-linear dispersion are provided by separate units, allows for greater flexibility in the setting of dispersion compensation profiles. For example, any linear dispersion compensation unit can be combined with any non-linear dispersion unit. By comparison, the provision of linear and non-linear dispersion by the same unit requires a unique unit for each dispersion compensation profile.

In view of the above arguments, it is respectfully submitted that the subject matter of claim 1 would not have been obvious over Loh et al.

The above arguments also apply to claim 25, which is directed to a method of providing dispersion compensation corresponding to claim 1.

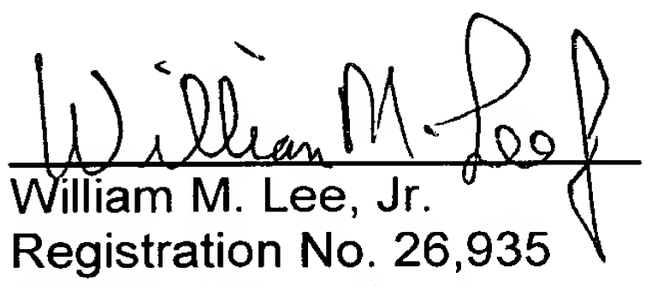
Detailed arguments are not presented in respect of dependent claims 2 to 24 and 26 to 30, since the relevant objections are no longer considered pertinent. Nevertheless, the arguments of the Examiner are not accepted.

Applicant notes that the references cited in the Information Disclosure Statement of October 12, 2000 have not been considered. References were submitted, and may have become separated at the PTO. Replacement copies of the references accompany this response.

In view of the above amendments and arguments presented with this response, it is hereby respectfully submitted that this application is in order for allowance. Such action is therefore solicited.

June 9, 2003

Respectfully submitted,



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